

American POTATO JOURNAL

*Official Organ of the Potato
Association of American*

VOLUME 39

JANUARY-DECEMBER, 1962

EDITORS

J. C. CAMPBELL, *Editor-in-Chief*

E. S. CLARK, *Associate Editor*

THE POTATO ASSOCIATION OF AMERICA

NEW BRUNSWICK, NEW JERSEY

OFFICERS

L. C. YOUNG, *President*

WILLIAM G. HOYMAN, *President-Elect*

WALTER C. SPARKS, *Vice President*

ROBERT V. AKELEY, *Past President*

RICHARD L. SAWYER, *Secretary*

JOHN C. CAMPBELL, *Treasurer*

DIRECTORS

ROBERT H. TREADWAY

HENRY M. DARLING

JOHN S. NIEDERHAUSER

SUSTAINING MEMBERS

STARKS FARMS INC.	Route 3, Rhinelander, Wisconsin
FRANK L. CLARK, Founder — Clark Seed Farms	Richford, New York
FRITO-LAY, INC.	3420 Singleton Blvd., Dallas 12, Texas
ROHM & HAAS COMPANY	Philadelphia, Pennsylvania
WISE POTATO CHIP CO.	Berwick, Pennsylvania
AMERICAN AGRICULTURAL CHEMICAL CO.	Carteret, New Jersey
LOCKWOOD GRADER CORP.	Gering, Nebraska
E. I. DU PONT DE NEMOURS AND CO. (INC.) Industrial and Biochemicals Dept.	Wilmington 98, Delaware
STERWIN CHEMICALS, INC.	1450 Broadway, New York 18, New York
MCCAIN FOODS LIMITED	East Florenceville, N. B., Canada

INDEX TO VOLUME 39

AUTHOR AND TITLE INDEX

- Akeley, R. V., A. E. Schark, E. N. McCubbin and A. H. Eddins. Ona, a new potato variety resistant to late blight, scab, verticillium wilt and mild mosaic, 464-467.
- Akeley, R. V., G. V. C. Houghland and A. E. Schark. Genetic differences in potato-tuber greening, 409-417.
- Anderson, J. C. Field plot technique. (Book review) 361.
- Bishop, J. C., *see* Shadbolt, C. A.
- Bishop, J. C., *see* Timm, Herman.
- Bishop, J. C., *see* Tyler, K. B.
- Blake, G. R., G. W. French, and R. E. Mylund. Seedbed preparation and cultivation studies on potatoes, 227-234.
- Blomquist, A. W. and F. I. Lauer. A simplified technique for handling and storing potato pollen, 340-342.
- Blomquist, A. W. and F. I. Lauer. First clonal generation potato progeny performance at two Minnesota locations, 460-463.
- Blood, P. T., *see* Prince, A. B.
- Buelow, F. H. and A. L. Rippen. Insulation and equipment for cold weather potato storages, 70-77.
- Cetas, R. C. and R. L. Sawyer. Evaluation of Uracide for the control of common scab of potatoes on Long Island, 456-459.
- Cetas, R. C., *see* Sawyer, R. L.
- Chapman, H. W., *see* Clegg, M. D.
- Clegg, M. D. and H. W. Chapman. Post harvest discoloration of chips from early summer potatoes, 176-184.
- Clegg, M. D. and H. W. Chapman. Sucrose content of tubers and discoloration of chips from early summer potatoes, 212-216.
- Correll, Donovan Stewart. The potato and its wild relatives (Book review), 471.
- Darling, Henry James D. Swan honored, 358.
- Davies, H. T., *see* Young, L. C.
- Davis, B. H. Potato blight epidemics throughout the world (Book review), 444.
- Davis, C. O., *see* Smith, Ora.
- Davis, Ralph Marshall, Jr. Tissue air space in the potato; its estimation and relation to dry matter and specific gravity, 298-305.
- Donaldson, Beatrice, *see* Laudon, Grace.
- Driver, C. M. Breeding for resistance to diseases and pests, 57-62.
- Eddins, A. H., *see* Akeley, R. V.
- Edgington, L. V., Influence of Connecticut temperatures on the relative pathogenicity of Maine and Connecticut verticillium isolates, 261-265.
- Edgington, L. V., *see* Miller, P. M.
- Federer, W. T. and R. L. Plaisted. A method for estimating combining ability components of variance in incomplete block designs, 197-206.
- Federer, W. T., *see* Plaisted, R. L.
- Fernow, K. H., L. C. Peterson and R. L. Plaisted. Thermoherapy of potato leaf roll, 445-451.
- French, G. W., *see* Blake, G. R.
- Gausman, Harold W., *see* Houghland, G. V. C.
- Guzman, Julia N., *see* Thurston, H. David
- Hansen, John C. Planting and harvest studies with the Norland potato in North Dakota, 291-297.
- Harrison, M. B., *see* Plaisted, R. L.
- Harrison, Monty D. Potato russet scab, its cause and factors affecting its development, 368-387.
- Harvey, O. A., *see* Shadbolt, C. A.
- Hawkins, Arthur. Adapting equipment for applying chemicals for lay-by weed control in potatoes, 162-165.
- Heidrick, Lee E., *see* Thurston, H. David.
- Heisler, E. G., James Siciliano, R. H. Treadway and C. F. Woodward. Recovery of free amino compounds from potato starch processing water by use of ion exchange, II. Large-scale laboratory experimentation, 78-82.

- Hodgson, W. A. Studies on the nature of partial resistance in the potato to *Phytophthora infestans*, 8-13.
- Hodgson, W. A., *see* Young, L. C.
- Hougland, G. V. C., Chairman, Harold W. Gausman, O. A. Lorenz and L. M. Ware. Report of the nutrition (fertilization) committee, 1960, 288-290.
- Hougland, G. V. C., *see* Akeley, R. V.
- Hoyle, B. J., *see* Timm, Herman
- Hoyman, Wm. G. Importance of tuber eye position when indexing for the leafroll virus, 439-443.
- Hyde, R. H. and C. Walkof. A potato seedling that chips from cold storage without conditioning, 266-270.
- Isleib, D. R. Dehydrated mashed potatoes made from different varieties and sources, 149-151.
- Jackson, L. P., Effects of soil water and temperature on the growth of potato sets, 452-455.
- Jackson, L. P. The relation of soil aeration to the growth of potato sets, 436-438.
- Johnston, G. R. and R. G. Rowberry. Determination of tuber sizing and accumulation of total solids contents of four potato varieties harvested at several dates, 29-35.
- Joiner, Sue and Andrea Mackay. Weight loss, specific gravity and mealiness during storage of Russet Burbank potatoes, 320-325.
- Kehr, A. E., *see* Plaisted, R. L.
- Knutson, Kenneth W. Studies on the nature of field resistance of the potato to late blight, 152-161.
- Lana, E. P., *see* Lauer, F. I.
- Larsen, Fenton E. External and internal (blackspot) mechanical injury of Washington Russet Burbank potatoes from field to terminal market, 249-260.
- Laudon, Grace E. and Beatrice Donaldson. Potato purchasing procedures used in quantity food service units in Wisconsin, 332-339.
- Lauer, F. I., E. P. Lana, R. B. O'Keefe and the late G. H. Rieman. Potato improvement through parental line breeding—a five year report of the North Central 35 Regional Project, NC-35, 282-287.
- Lauer, F. I., *see* Blomquist, A. W.
- Laughlin, Winston M. Spray concentrations of potassium chloride and potassium sulfate affect potato growth, yields, and chemical composition, 100-106.
- Laughlin, Winston M. Influence of soil and spray applications of phosphorus on potato yield, dry matter content, and chemical composition, 343-347.
- Laughlin, Winston M. Soil and foliar applications of nutrients affect potato yields, dry matter, and foliar necrosis, 125-134.
- Lawrence, C. H., *see* Young, L. C.
- Livingston, Clark H. The effects of various treatments on the cut surface of seed potatoes, 271-281.
- Lorenz, O. A., *see* Hougland, G. V. C.
- Lorenz, O. A., *see* Tyler, K. B.
- MacKinnon, J. P. Relationships between ease of infection of *Solanum* species with potato leaf roll virus and their suitability as hosts for aphids, 327-331.
- Mackey, Andrea, *see* Joiner, Sue
- McCubbin, E. N., *see* Akeley, R. V.
- Miller, P. M. and L. V. Edgington. Controlling parasitic nematodes and soil-borne diseases of potatoes with soil fumigation, 235-240.
- Nylund, R. E., *see* Blake, G. R.
- O'Brien, Muriel J., *see* Raymer, W. B.
- O'Keefe, R. B., *see* Lauer, F. I.
- Peterson, L. C., *see* Plaisted, R. L.
- Plaisted, R. L., L. Sanford, W. T. Federer, A. E. Kehr, and L. C. Peterson. Specific and general combining ability for yield in potatoes, 185-196.
- Plaisted, R. L., M. B. Harrison and L. C. Peterson. A genetic model to describe the inheritance of resistance to the golden nematode, *Heterodera rostochiensis* (Wollenweber) found in *Solanum vernei*, 418-435.
- Plaisted, R. L., *see* Federer, W. T.
- Prince, A. B. and P. T. Blood. Some effects of irrigation and fertilization on the yield and quality of Kennebec potatoes, 313-319.

- Rappaport, Lawrence, *see* Timm, Herman
- Raymer, W. B. and Muriel J. O'Brien. Transmission of potato spindle tuber virus to tomato, 401-408.
- Reid, Edgar C. "Stitched End", an interesting and unusual defect in potatoes, 468-470.
- Rieman, G. H. Superior: a new white, medium-maturing, scab-resistant potato variety with high chipping quality, 19-28.
- Rieman, G. H., *see* Lauer, F. I.
- Rippen, A. L., *see* Buelow, F. H.
- Ross, L. R. and R. H. Treadway. A new and rapid method for determining fat in French fried potatoes, 206-216.
- Rowberry, R. G., *see* Johnson, G. R.
- Sanford, L., *see* Plaisted, R. L.
- Sawyer, R. L. Are you a good storage manager? 355-356.
- Sawyer, R. L. and R. C. Cetas. Yield variability among Katahdin seed sources, 116-121.
- Sawyer, R. L. and W. A. Thorne. Alcohol for sprout inhibition of potatoes, 167-175.
- Sawyer, R. L. John C. Campbell honored, 360.
- Scannell, J. W. Authur H. Eddins honored, 357.
- Schark, A. E., *see* Akeley, R. V.
- Schultz, E. S., *see* Shands, W. A.
- Schweers, V. H., *see* Shadbolt, C. A.
- Shadbolt, C. A., J. C. Bishop, V. H. Schweers and O. A. Harvey. Factors affecting potato seed piece breakdown during hot weather, 217-226.
- Shands, W. A. and G. W. Simpson. The relationship of aphid abundance on potato plants to specific gravity of the tubers, 1-7.
- Shands, W. A., R. E. Webb and E. S. Schultz. Tests with milk and rice polish to prevent infection of Irish potato with virus Y transmitted by aphids, 36-40.
- Siciliano, James, *see* Heisler, E. G.
- Simpson, G. W., *see* Shands, W. A.
- Smith, Ora and C. O. Davis. Potato quality XIII. Preventing after-cooking darkening in oil blanched French fries, 45-56.
- Smith, Ora and C. O. Davis. Potato quality XIV. Prevention of graying in dehydrated products, 135-148.
- Takatori, F. H., *see* Tyler, K. B.
- Thorne, W. H., *see* Sawyer, R. L.
- Thurston, H. David, Lee E. Heidrick and Julia N. Guzman. Partial resistance to *Phytophthora infestans* (Mont.) De Bary within the Coleccion Central Colombiana, 63-69.
- Tim, Herman, Lawrence Rappaport, J. C. Bishop and B. J. Hoyle. Sprouting, plant growth, and tuber production as affected by chemical treatment of white potato seed pieces IV. Responses of dormant and sprouted seed potatoes to gibberellic acid, 107-115.
- Treadway, R. H., *see* Heisler, E. G.
- Treadway, R. H., *see* Ross, L. R.
- Tyler, K. B., O. A. Lorenz, F. H. Takatori and J. C. Bishop. Urea nitrogen for potatoes, 89-99.
- Walkot, C., *see* Hyde, R. H.
- Wallin Jack R. Summary of recent progress in predicting late blight epidemics in United States and Canada, 306-312.
- Webb, R. E., *see* Shands, W. A.
- Woodward, C. F., *see* Heisler, E. G.
- Young, Donald A. The selection of potato samples for the evaluation of culinary quality, 14-18.
- Young, L. C., H. T. Davies, C. H. Lawrence and W. A. Hodgson. Avon: a new potato variety with moderate resistance to common scab, excellent cooking quality, and ability to size its tubers early, 363-367.

SUBJECT INDEX

- After-cooking discoloration, *see* Potato quality
Alcohols for sprout inhibition of potatoes, 167-175
Amino compounds, recovery of, from potato starch processing water by use of ion exchange. II. Large-scale laboratory experimentation, 78-82
Aphid abundance on potato plants, related to specific gravity of tubers, 1-7
 see Solanum species
 see Virus Y
Avon: a new potato variety with moderate resistance to common scab, excellent cooking quality, and ability to size its tubers early, 363-367
Bibliography on potatoes, *see* Marketing fresh potatoes
Blight, *see* Late blight: *see also* Potato blight
Book reviews, *see* Field plot technique
 see Marketing fresh potatoes (a bibliography)
 see Potato blight epidemics throughout the world,
 see Rockefeller Foundation report on agriculture
 see The potato and its wild relatives
Breeding for resistance to diseases and pests, 57-62
 see Combining ability
 see Potato improvement
 see Potato progeny
Canada, *see* Late blight
Chemical composition, *see* Spray applications
Chemical treatment, *see* Gibberellic acid
 see Weed control
Chipping quality, *see* Potato seedling
 see Superior
Chips, post harvest discoloration of, from early summer potatoes, 176-184
 see Sucrose content
Coleccion Central Columbiana, *see Phytophthora infestans*
Combining ability, method of estimating combining ability components of variance in incomplete block designs, 197-206
 specific and general, for yield in potatoes, 185-197
Common scab, *see* Scab
Connecticut, *see* Verticillium
Culinary quality, *see* Potato selection
Cultivation, *see* Seedbed preparation
Dehydrated mashed potatoes made from different varieties and sources, 149-151.
 see Potato quality XIV
Diseases, resistance to, by breeding, *see* Breeding
Dormant seed, *see* Gibberellic acid
Economic study of produce marketing associations, 40
Equipment, *see* Potato storage
Fat, *see* French fried potatoes
Fertilization, committee report, *see* Nutrition
 effects on yield and quality of Kennebec potatoes, *see* Irrigation
 see Phosphorus
 see Soil and foliar applications
 see Spray concentrations
 see Urea nitrogen
Field plot technique, a book review, 361
Foliar necrosis, *see* Soil and foliar applications
Foundation seed farm presented to Cornell Univ., 122-124
French fried potatoes, new method of determining fat content in, 207-211
 see Potato quality XIII
Fumigation, *see* Parasitic nematodes
Genetic differences in potato-tuber greening, 409-417
Genetic model to describe inheritance of resistance to the golden nematode, *Heterodera rostochiensis* found in *Solanum vernie*, 418-435
Gibberellic acid, responses of dormant and sprouted seed potatoes to, 107-115
Golden nematode, *see* Genetic model

- Graying, *see* Potato quality
Harvest date, *see* Tuber sizing
 see Norland
Heterodera rostochiensis, *see* Genetic model
Honorary life members, Campbell, John C., 360
 Eddins, Arthur H., 357
 Swan, James D., 358-359
Ion Exchange, *see* Amino compounds
Irish Cobbler, *see* Tuber sizing
Irrigation and fertilization, effects of, on yield and quality of Kennebec potatoes, 313-319
Katahdin seed sources, yield variability of, 116-121
 see Tuber sizing
Kennebec, effects of irrigation and fertilization on, *see* Irrigation
Late blight, nature of field resistance to, 152-161
 progress in predicting epidemics of, in United States and Canada, 306-312
 see Ona
 see Potato blight
Leafroll virus, importance of tuber eye position when indexing for, 439-443
 see Potato leafroll
 see *Solanum* species
Long Island, *see* Scab
Maine, *see* Verticillium
Marketing fresh potatoes (a bibliography), 444
Mechanical injury (black spot) of Washington Russet Burbank potatoes, 249-260
Mild mosaic, *see* Ona
Milk, *see* Virus Y
Minnesota, *see* Potato progeny
Motion picture announced, *see* Potatoes take a new look
Nematodes, *see* Parasitic nematodes
Nitrogen, *see* Fertilization
Norgleam, *see* Tuber sizing
Norland, in North Dakota, planting and harvesting studies with, 291-297
North Central 35, Regional Project, N. C.-35, *see* Potato improvement
Nutrition Committee report (1960), 288-290
Obituaries, Chapman, Harold W., 399
 Fitch, Charles L., 84
 Martin, William H., 41
 Parks, Norman M., 42
Ona, potato variety resistant to late blight, scab, verticillium wilt, and mild mosaic, 464-467
Parasitic nematodes, control of, and soil-borne diseases of potato with fumigation, 235-240
Pests, resistance to by breeding, *see* Breeding
Phosphorus, influence of, soil and spray applications of, on yield, dry matter and chemical composition, 343-347
Phytophthora infestans, studies on partial resistance to, 8-14
 partial resistance to, in Coleccion Central Colombiana, 63-69
Plant growth as affected by chemical treatment, *see* Chemical treatment
Planting studies, *see* Norland
Plot technique, *see* Field plot technique
Pollen, *see* Potato pollen
Potassium chloride, *see* Spray concentrations
Potassium sulfate, *see* Spray concentrations
Potato, *see* The potato and its wild relatives, book review
Potato blight epidemics throughout the world, book review, 444
Potato improvement through parental line breeding, five year report of the North Central 35 Regional project, NC-35, 282-287
Potato leafroll, thermotherapy of, 445-451
 see *Solanum* species
Potato pollen, a simplified technique for handling and storing of, 340-342
Potato progeny performance, of first clonal generation in Minnesota, 460-463
Potato, processed products have large potential market, 40

- Potato purchasing procedures used in quantity food service units in Wisconsin, 332-339
- Potato Quality, XIII. Preventing after-cooking discoloration in oil blanched French fries, 45-56
- XIV. Prevention of graying in dehydrated potato products, 135-148
- Potato resistance, nature of, to *Phytophthora infestans*, 8-13
- Potato russet scab, its cause and factors affecting its development, 368-387
- Potato seedling F 5208, chips from cold storage without conditioning, 266-270
- Potato selection for evaluation of culinary quality, 14-18
- Potato sets, relation of soil aeration to growth of, *see* Soil aeration
- Potato spindle tuber virus, transmission of, to tomato, 401-408
- Potato starch, *see* Amino compounds
- Potato storage, insulation and equipment for cold weather, 70-77
- Potato tuber greening, genetic differences in, 409-417
- Potato yield, *see* Soil and foliar applications
- Potatoes take a new look, motion picture *re.* production, marketing and processing, 42
- Program, *see* Potato Association of America
- Quality, *see* Potato quality
- Quantity, food service, *see* Potato purchasing
- Resistance to diseases and pests, *see* Breeding
- to late blight, *see* Late blight resistance
- to common scab in Avon potato, *see* Avon
- Rice polish, *see* Virus Y
- Russet Burbank, weight loss, specific gravity, and mealiness of, during storage, 320-325
- see* Mechanical injury
- Russet scab, *see* Potato russet scab
- Scab, common, control of with Uracide on Long Island, 456-459
- Scab resistance, *see* Avon, *see* Ona, *see* also Superior
- Seed piece breakdown during hot weather, factors affecting it, 217-226
- Seed potatoes, effects of various treatments on suberization of cut surface of, 271-281
- Sodium acid pyrophosphate, *see* Potato quality
- Soil aeration, relation to growth of potato sets, 436-438
- Soil-borne diseases, *see* Parasitic nematodes
- Soil fumigation, *see* Parasitic nematodes
- Soil and foliar applications of nutrients affect yields, dry matter and foliar necrosis, 125-134
- Soil water and temperature, effect on growth of potato sets, 452-455
- Solanum* species, relationships between ease of infection of, with potato leaf roll virus and their suitability as hosts for aphids, 327-331
- Solanum verni*, inherited resistance to golden nematode, *see* Genetic model
- Solids, *see* Tuber sizing
- Specific gravity relationships of, to aphid abundance, *see* Aphids
- see* Tissue air space
- see* Russet Burbank
- Spray concentrations of KCl and K_2SO_4 affect potato growth, yields and chemical composition, 100-106
- Sprouting and or sprout inhibition, *see* Alcohols
- see* Gibberellic acid
- Stitched end, an interesting and unusual potato defect, 468-470
- Storage management, 355-356
- Storage, insulation and equipment for, 70-77
- Storage of potato pollen, *see* Potato pollen
- see* Russet Burbank
- Suberization, *see* Seed potatoes
- Sucrose content of tubers and discoloration of chips from early summer potatoes, 212-216
- Superior, a new white, medium maturing, scab resistant potato variety with high chipping quality, 19-28
- Temperatures, influence of *see* Verticillium
- see* Soil water
- The potato and its wild relatives, book review, 475
- Tissue air space in the potato, its estimation and relation to dry matter and specific gravity, 298-305

- Total solids, *see* Tuber sizing
- Treatments, *see* Seed potatoes
- Tuber eye position, *see* Leafroll
- Tuber production, *see* Gibberellic acid
- Tuber sizing, determination of, and accumulation of total solids contents of, four potato varieties harvested at several dates, 29-35
- United States, *see* Late blight
- Urea nitrogen for potatoes, 89
- Uracide evaluation, *see* Scab
- Varieties, *see* Avon, *see* Ona, *see* Norland, *see* Potato seedling F 5208, *see* Russet Burbank, *see* Superior
- Verticillium isolates, Maine and Connecticut, influence of Connecticut temperatures on relative pathogenicity of, 261-265
see Ona
- Virus Y infection of Irish potato by aphids, tests with milk and rice polish to prevent, 36-40
- Weather, hot, *see* Seed piece breakdown
- Weed control in potatoes, adapting equipment for applying chemicals for, 162-165
- Wild, *see* The potato and its wild relatives, book review
- Wisconsin food service units, *see* Potato
- Yield, *see* Combining ability
see Irrigation
see Katahdin
see Soil and foliar applications
see Spray concentrations
see Tuber sizing